



# FORENSIC CRASH SPECIALISTS & 3D ANIMATION EXPERTS

## VEHICLE DYNAMICS ANALYSIS

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REPORT DATE:

SEPTEMBER 8, 2014

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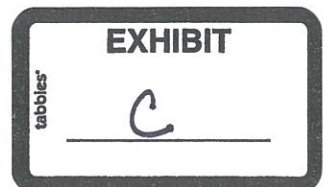
UNITED STATES V. THOMAS RODELLA

MARCH 26, 2014 – APPROXIMATELY 4:00 PM

RIO ARRIBA COUNTY ROAD 126, AREA OF HOUSE 100C

RIO ARRIBA COUNTY, NEW MEXICO

THE FOLLOWING REPORT CONTAINS OPINIONS AND FINDINGS THAT ARE BASED ON A REASONABLE DEGREE OF SCIENTIFIC  
CERTAINTY IN THE FIELD OF TRAFFIC CRASH RECONSTRUCTION





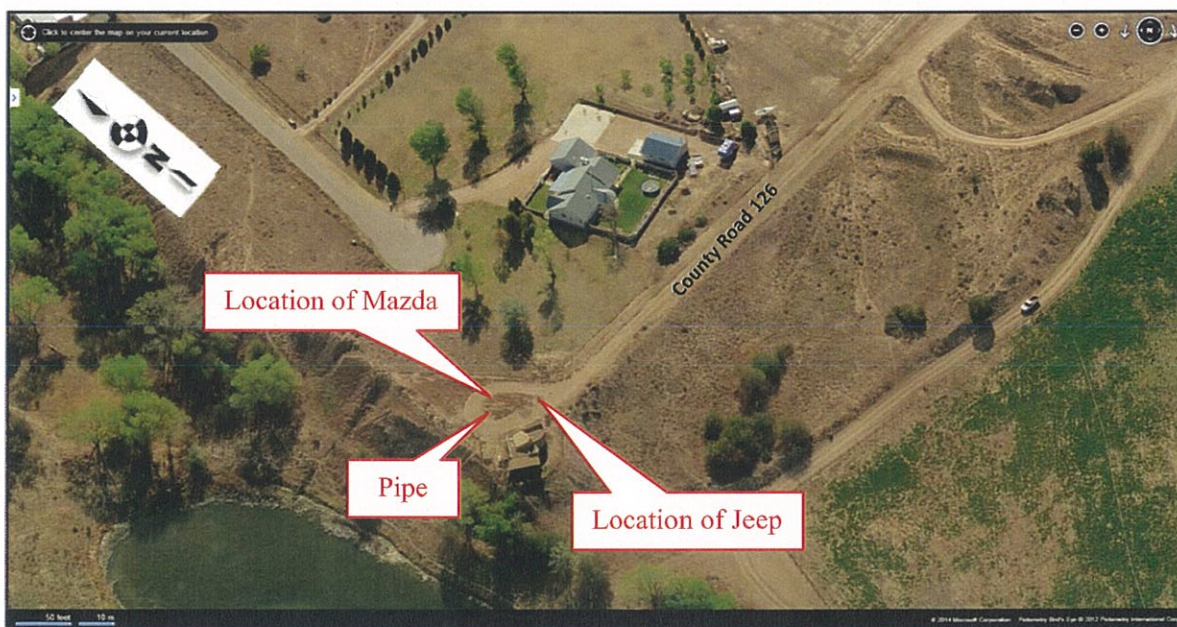
## INTRODUCTION

I, Dennis O'Brien of Forensic Crash Specialists, Inc. was contacted by Mr. Robert J. Gorence, Attorney at Law and retained to conduct a vehicle performance analysis and case review in this matter. This report will show the results of the investigation and list my findings and opinions in the case.



## BACKGROUND

This incident involved a male individual, identified as Mr. Michael Tafoya and the Rio Arriba County Sheriff, Mr. Thomas Rodella and Mr. Thomas Rodella Jr. Mr. Tafoya was operating a 2007 Mazda 3 passenger vehicle and the Mr. Thomas Rodella Jr. was operating a 2008 Jeep Wrangler with his father as the right front seat passenger. The vehicles ultimately traveled to a dead-end location off of Rio Arriba County Road 126, near house number 100C, where Mr. Tafoya was arrested. The location where the vehicles came to a stop can be seen here:



## CASE DOCUMENTS REVIEWED/ INVESTIGATION

I reviewed the following files and conducted the following actions as part of the investigation into this collision:



1. I was provided with and reviewed the .pdf documents of New Mexico State Police report files, bates stamped NM State Police\_001-0045 and RASO documents also identified by Bates Stamps RASO\_001-0032
2. I also received copies of the following documents:
  - Verizon phone records, Bates stamped Verizon\_0022
  - Verizon phone records, Bates stamped Verizon\_0146
  - Four Google maps printed with sketch drawings prepared by Mr. Thomas Rodella Jr. that show his version of events with respect to vehicle movement at the dead-end of Rio Arriba County Road 126B, where the incident terminated
  - Federal Bureau of Investigation Complaint Form, Bates stamped Tafoya\_0001 – 0051
  - Miscellaneous printed Google Maps prepared by Thomas Rodella Jr. showing distances and locations
  - A scanned color printed copy of a typed document that appears to be the statement of Mr. Tafoya regarding this incident
3. A site visit was conducted on September 7, 2014, where I met with Mr. Thomas Rodella Jr.
  - I requested that Mr. Rodella Jr. meet me in the La Mesilla area so that I could inspect the Jeep Wrangler that he operated on the day of the events in this case
  - I photographed the Jeep and also requested that Mr. Rodella Jr. direct me along the route and brief me of his version of events in this case
    - The route began at the entrance to the Santa Clara Pueblo Golf Course and ended at the location off of Rio Arriba County Road 126, where the Mazda became engaged with the steel pipe
    - I obtained GPS coordinates of locations identified by Mr. Rodella Jr. as pertaining to this incident
4. Acceleration tests were conducted of the Jeep Wrangler utilizing an onboard accelerometer
  - The Jeep was found to have a maximum acceleration factor of .24g, which is equal to an acceleration rate of 7.73 fps<sup>2</sup>
  - The Jeep Wrangler specifications obtained from Expert AutoStats indicates that this vehicle in new condition was found to have an acceleration factor of .27 g or 8.7 fps<sup>2</sup>
  - I also instructed Mr. Rodella Jr. to operate the Jeep Wrangler in the same manner in which he did on the day of the incident:
    - The Jeep was accelerated from a stop in a southerly direction from the shoulder of State Road 399
      - The acceleration factor was measured to be .135 g or 4.34 fps<sup>2</sup>
5. I was unable to conduct acceleration tests on the Mazda 3 operated by Mr. Tafoya
  - I obtained performance specifications from the Expert AutoStats database, which indicates that the Mazda had a maximum acceleration capability of .59g or 18.99 fps<sup>2</sup> for 0 to 30 mph performance and .37 g or 11.91 fps<sup>2</sup> for 0 to 60 mph performance



## INVESTIGATIVE FINDINGS & OPINIONS

The following opinions and conclusions were made as a result of the investigation into this collision:

1. The Mazda 3 accelerates at a much faster rate than the Jeep
2. The Mazda 3 would attain 30 mph in 2.3 seconds and 60 mph in 7.4 seconds
3. The Jeep would attain 30 mph in 5.6 seconds and 60 mph in 11.3 seconds
  - A. If Mr. Rodella Jr. paused the Jeep to allow the Sheriff to walk back to it and re-enter the vehicle after the Mazda sped away, that time would also be added to the acceleration time and would also indicate that the Mazda would have a large lead on the Jeep, which if acceleration continued, could create a gap/distance where the Jeep would not be able to close
4. The displaced dirt and tire marks visible in the law enforcement photographs are consistent with an aggressive maneuver where the driver accelerated backwards and cut the tires to the right, followed by braking to swing the front-end of the Mazda around roughly 180-degrees from west to east
  - A. This evidence is consistent with information provided by Mr. Rodella Jr. about the manner in which Mr. Tafoya was operating his vehicle just prior to impacting the pole
  - B. It is also consistent with the path of travel of the Mazda where it backed-up and struck the pipe, which protruded out of the ground by 2-feet, after first spinning around

**These findings and opinions are based on a reasonable degree of scientific certainty in the field of Traffic Crash Reconstruction. I trust you will find this to be of assistance. Please contact me if any questions arise from your review of this report. In the event that additional information or data becomes available, I reserve the right to supplement this analysis if required.**

Dennis L. O'Brien  
Traffic Crash Reconstructionist

